

# CS330 Management Information Systems

## Winter 2005 Assignment 3

**Due date: Monday March 28 in class or drop-box.**

Note that the due date is one week later than originally planned.

### 1. Database design

Consider the following table that stores information about auto parts:

Supplied\_items

<u>S#</u>	<u>Sname</u>	<u>City</u>	<u>Phone</u>	<u>I#</u>	<u>Iname</u>	<u>Price</u>
S1	Magna	Ajax	905 555 1111	I1	Bolt	0.50
S1	Magna	Ajax	905 555 1111	I2	Nut	0.25
S1	Magna	Ajax	905 555 1111	I3	Screw	0.30
S2	Delco	Oshawa	905 555 2222	I3	Screw	0.40

1. Suppose that you wanted to purchase a new kind of item (I# 4) called “Washer”, but you hadn’t selected a supplier yet – in fact, it might be a completely new supplier. How could you represent this information in the table?
2. This table does not accurately represent the individual “entities” that are apparent. Decompose the table (by the way, the text calls this process “normalization”) into smaller tables.
3. Sketch an ER (Entity-Relationship) diagram showing the entities, attributes and relationships corresponding to your set of tables. Remember to show the “key” attributes.
4. Consider the administrative information that UW stores about faculty members.
  - a. Each Faculty-member has a name, employee number and date-of-birth.
  - b. Each faculty member “belongs” to a Faculty. Each Faculty is identified by a name and an office number (which can contain letters to show the building) where the Dean’s office is located.
  - c. Faculty members can teach courses. A course has a number, a department prefix (eg, “CS” “PMath”, etc), a name and a description

Sketch an ER diagram that models this information. You must show entities, attributes, relationships and keys.

### 2. Decision Support System

Go to <http://www.umsi.edu/~sauter/DSS/book/gdss.html> and the hyperlinks there (e.g. [http://www.umsi.edu/~sauter/DSS/book/dss\\_software.html](http://www.umsi.edu/~sauter/DSS/book/dss_software.html)). Look through the material and choose one DSS Application. Read about it. Write about it. Download a free trial

copy and try it out, if possible. Compare the actual software to our class discussions and the textbook's theoretical discussion of what a DSS or GDSS should be.

Some possible items to include in the report:

- what does it do?
- who is the typical user of the system currently?
- are there any other potential user communities that you can think of? For example, could you use a DSS or GDSS as part of your academic career?
- comparison of the product to the theoretical definition.

You might wish to describe items such as purpose, features, current documentation, on-line help, ease of use, user interface issues, and so on. If you wish to show screens or output, include them as an appendix.

The marking scheme will reward reports which are well-organized with a main title, sub-titles, **specific** examples of use of the software, and recommendations on software improvements and/or potential uses or users of the software. The lowest marks go to reports that sound like advertisements copied from the web.

In short, imagine you have been assigned the task of selecting and purchasing a DSS or GDSS. Do the research, make a selection and justify it.

Length: non-specific. Your report should be as long as it needs to be to justify your selection.

### ***3. Experiment with a Natural Language Query System***

Access the START Natural Language Question Answering System, found at:  
<http://www.ai.mit.edu/projects/infolab>.

1. Try one or two of the sample questions. Then make up 10 questions of your own. Report on your questions and results (include output captures in an appendix).
2. How well did START do? Evaluate START as follows:
  - a. Choose one of your queries. Try to evaluate it using a general-purpose search engine, such as Google. Compare the results you received with the START results.
  - b. Comment on the overall effectiveness of START. Did it provide accurate information? Did it provide useful information?